

FloodSmart Plus



Flood Consequence Assessment

Site Address

236 Cromwell Road
Newport
NP19 0HS

Grid Reference

333208, 187529

Report Prepared for

Joseph Ayaaba
236 Cromwell Road
Newport
NP19 0HS

Date

20/02/2026

Report Status

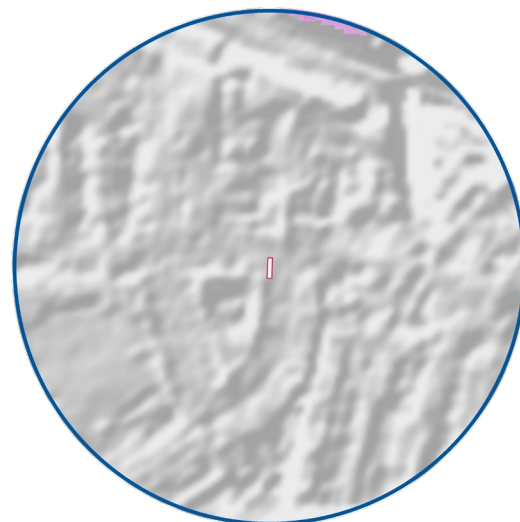
FINAL

Site Area

120 m²

Report Reference

EF000876R1



RISK – Very Low to Medium

The Site is mapped within NRW's tidal Flood Zone 3 (High probability), with the flood risk originating from the River Usk estuary. Taking flood defences into account, the risk of flooding from rivers is Very Low to Low, and from the sea it is Low. The risk from tidal sources has been increased to Medium following analysis of the detailed flood model.

Surface water (pluvial) flood risks are Very Low. Groundwater flood risks are Negligible and flooding risks from artificial sources (i.e. canals, reservoirs and sewers) are Low.

It is noted that the current proposals do not meet the TAN15 acceptability criteria and tolerable conditions. Ground floor sleeping accommodation should therefore be relocated to the first floor to ensure an appropriate level of protection.

Mitigation measures are recommended in this report to reduce the risks over the lifetime of the development.

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1. Executive summary



The Planning Policy Wales (PPW) 12th edition (2024) and Technical Advice Note 15 (TAN 15) (2025) requires Flood Consequence Assessments (FCA) to review flooding from all potential sources. A review has been undertaken of national environmental data sets to assess the potential flood risk to the Site. The review is provided within this concise interpretative report written by an experienced GeoSmart consultant.

Site analysis

Source of Flood Risk	Baseline ¹	After analysis ²	After Mitigation ³
River (fluvial) flooding	Very Low to Low		Very Low
Sea (coastal/tidal) flooding	Low	Medium	Low
Surface water (pluvial) flooding	Very Low		Very Low
Groundwater flooding	Negligible		N/A
Other flood risk factors present	No		N/A
Is any other further work recommended?	Yes		Yes (see below)

1 BASELINE risks assigned for the whole Site, using national risk maps, including the benefit of NRW flood defences and the impacts of climate change.

2 AFTER ANALYSIS modification of risk assessment based on detailed site specific analysis including some or all of the following: flood model data, high resolution mapping, building location, access routes, topographic and CCTV surveys. Reasons for the change in classification are provided in the text.

3 AFTER MITIGATION risks include risks to proposed development / asset and occupants if mitigation measures recommended in this report are implemented, including the impacts of climate change.

*N/A indicates where mitigation is not required.

Summary of existing and proposed development

The Site was previously used within a residential capacity as a three storey, four bedroom, terraced dwelling. This report has been compiled to support the retrospective planning permission for the Site. It is understood that the scope of works includes the change of use of the existing dwelling to a six bedroom house in multiple occupancy (HMO) including ground floor sleeping accommodation. Site plans are included within Appendix A.

Summary of flood risks

The flood risks from all sources have been assessed as part of this report and are as follows:

River (fluvial) and Sea (Estuarine/Coastal) flooding

According to NRW's Flood Map for Planning, the Site is located within tidal Flood Zone 3, which equates to a High probability of flooding from tidal sources.

The Site benefits from the presence of flood defences and is located within a TAN15 Defended Zone for tidal flooding. An embankment is located c. 290 m away, designed to provide a 1 in 200 year event standard of protection.

According to the NRW's Flood Risk Assessment Wales (FRAW) map, which considers the type, condition and crest height of flood defences, the Site has a Very Low to Low risk of fluvial flooding and a Low risk of tidal flooding. This is associated with the nearby watercourse and sea, the River Usk Estuary.

Modelled flood data obtained from the NRW has been analysed in line with the most up to date guidance on climate change to confirm a maximum "design" flood level at the Site.

- During a 1 in 200 year 2126 scenario tidal flood event, the flood level at the Site would be 7.79 mAOD.
 - During this event, flood depths in the area proposed for development could be up to 1.08 m. Flood mitigation measures are included in the next section.

Emergency evacuation routes are available to the north. In the event of a flood, safe refuge can be taken on the 1st floor levels and above.

Baseline mapping indicates a Low risk of tidal flooding. However, a review of the flood model data indicates the risk is likely to be higher.

Surface water (pluvial) flooding

According to NRW's Flood Map for Planning, the Site is located within Surface Water and Small Watercourses Flood Zone 1.

According to NRW's Flood Risk Assessment Wales (FRAW) mapping, the Site has a Very Low risk of flooding from surface water and small watercourses.

Groundwater flooding

Groundwater Flood Risk screening data indicates there is a Negligible potential risk of groundwater flooding at the surface in the vicinity of the Site during a 1 in 100 year event.

Artificial sources of flooding

The risk of flooding from artificial (man-made) sources such as reservoirs, sewers and canals has been assessed:

- NRW's Risk of Flooding from Reservoir map confirms the Site is not at risk of reservoir flooding. The potential for a breach of a reservoir to occur and flooding affecting the Site is low.
- Ordnance Survey (OS) data confirms there are no canals near to the Site.
- The Strategic Flood Consequence Assessment (SFCA) (JBA Consulting, 2022) does not provide sewer flooding records for the Newport City Council area.

A risk has been identified from sewers, although the level of risk could not be determined. Therefore, the risk of flooding from artificial sources is considered to be Low.

- The risk to the development has been assessed over its expected 100 year lifetime, including appropriate allowances for the impacts of climate change which could increase the flood risk to the Site. Risks identified include sea level rise and increases in river flooding and appropriate mitigation measures are proposed.

Recommendations for flood mitigation are provided below, based upon the flood risk identified at the Site and TAN15 (2025) requirements for residential Highly Vulnerable development:

- Highly Vulnerable development must be flood free in the 1 in 100 year fluvial event and 1 in 200 year tidal event, including an allowance for climate change.
 - **GeoSmart Comment.** Analysis of the Site demonstrates that the development would not be flood free during a 1 in 200 year tidal event from the River Usk estuary, with depths of up to 0.08 m on Site. Therefore, the proposals do not satisfy the acceptability criteria.
 - However, it should be taken into consideration in the application that the proposals are for a change of use of an existing building from residential to an HMO, with no increase in vulnerability classification. The recommended mitigation measures will provide greater protection to the Site throughout the lifetime of the development in comparison with the existing building, which should be considered as part of the planning application.
- During an extreme 0.1% flood event including an allowance for climate change, flood depths should not exceed 600 mm at the Site. The maximum permitted velocity of flood waters is 0.15 m/s for Highly Vulnerable development and 0.3 m/s for Less Vulnerable development.
 - **GeoSmart Comment.** Analysis of the Site indicates that flood depths across the Site would exceed 600 mm during the 1 in 1000 year + CC tidal event, and flood waters would exceed 0.3 m/s in velocity. Therefore, the development does not meet the tolerable conditions.
 - However, the recommended mitigation measures will help reduce the risk to the Site throughout the lifetime of the development. For example, the landlord and occupants should be signed up to the NRW's flood alert and warning service, to allow evacuation of the Site on receipt of a warning, and to prevent occupants evacuating through deep, fast flowing floodwater in the event of a 1 in 1000 year flood. It should also be noted that the Shoreline Management

Plan (SMP) for the Anchor Head to Lavernock Point area (Refs: CALD1, NEW4 and NEW5) confirms the policy for defences over the next 100 years is to hold the line (DEFRA, 2025).

Recommendations

Recommendations for flood mitigation are provided below, based upon the proposed development and the flood risk identified at the Site.

- It is recommended that the current development is reconfigured as it does not pass the TAN15 (2025) acceptability criteria and tolerable conditions. It is noted that the development does not result in an increase in vulnerability classification, however, it does increase the number of occupants at the Site. It is therefore recommended that the below mitigation measures are incorporated to provide a betterment on resilience and recoverability in comparison to the existing Site.
- As the development proposals are comprised of a change of use, the raising of Finished Floor Levels (FFL) is unlikely to be a feasible method of flood mitigation. Finished floor levels should be raised as high as feasibly possible and set no lower than existing. Sleeping accommodation should be located at least 0.30 m above the undefended 1 in 200 year plus 2126 climate change flood level of 8.78 mAOD. This would ensure an appropriate level of residual protection in the event of a defence breach and provide sufficient safe refuge during extreme flooding events. Standard flood resilient design measures should be retrofitted where feasible.
- A Flood Warning and Evacuation Plan (FWEP) is recommended to ensure persons using the Site can evacuate safely on receipt of a Flood Warning.
 - The landlord and occupants of the Site should also be signed up to receive NRW Flood Alerts and Flood Warnings.
- The ongoing management and maintenance of existing and any proposed drainage networks, under the riparian ownership of the developer, should be undertaken in perpetuity with the development.

GeoSmart recommend the mitigation measures discussed within this report are considered as part of the proposed development where possible and evidence of this is provided to the Local Planning Authority as part of the planning application.

2. Introduction



Background and purpose

A site-specific flood consequence assessment has been undertaken, to assess the flood risk to and from the development Site. This assessment has been undertaken by firstly compiling information concerning the Site and the surrounding area. The information gathered was then used to construct a 'conceptual site model', including an understanding of the appropriateness of the development, as defined in the PPW (2024), and the source(s) of any flood risk present. Finally, a preliminary assessment of the steps that can be taken to manage flood risk to the development was undertaken.

This report has been prepared with reference to the Technical Advice Note (TAN) 15 (2025) which supplements the PPW (2024).

The general approach of PPW, supported by TAN15, is to advise caution in respect of new development in areas at high risk of flooding by setting out a precautionary framework to guide planning decisions. The overarching aim of the precautionary framework is, in order of preference, to:

- Direct new development away from those areas which are at high risk of flooding; and
- Where development is considered to be in high-risk areas (Zones 2 and 3) only those developments which can be justified on the basis of the tests outlined in Section 6 are located within such areas.

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.

Report scope

A thorough review of a commercially available flood risk report and NRW supplied data has been undertaken, indicating potential sources of flood risk to the Site from rivers and tidal sources, surface run-off (pluvial), groundwater and reservoirs, including historical flood information and modelled flood extent. Appropriate measures are recommended to manage and mitigate the flood risk to the property.

Information obtained from NRW and a review of the South East Wales Strategic Flood Consequence Assessment (Stage 1) (SFCA) (JBA Consulting, 2022) and the Newport Local Development Plan 2011-26 (Newport City Council, 2015) used to ascertain local flooding issues and, where appropriate, identify information to support an assessment of the acceptability criteria for flooding consequences, as required as part of the PPW (2024) and TAN15 (2025).

The existing and future flood risk to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation

measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.

An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. A drainage strategy to control runoff can be commissioned separately if identified as a requirement within this report.

Report limitations

It is noted that the findings presented in this report are based on a desk study of information supplied by third parties. Whilst we assume that all information is representative of past and present conditions, we can offer no guarantee as to its validity and a proportionate programme of site investigations would be required to fully verify these findings.

The basemap used is the OS Street View 1:10,000 scale; however, the Site boundary has been drawn using BlueSky aerial imagery to ensure the correct extent and proportion of the Site is analysed.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Datasets

The following table shows the sources of information that have been consulted as part of this report:

Table 1. Datasets consulted to obtain confirmation of sources of flooding and risk

Source of flooding	Datasets consulted			
	Commercial Flood Maps	Local Policy & Guidance Documents*	Natural Resources Wales (Appendix B)	OS Data
Historical	X	X	X	
River (fluvial) / Sea (tidal/coastal)	X	X	X	

Source of flooding	Datasets consulted			
	Commercial Flood Maps	Local Policy & Guidance Documents*	Natural Resources Wales (Appendix B)	OS Data
Surface water (pluvial)	X	X	X	
Groundwater	X	X		
Sewer		X		
Culvert/bridges		X		X
Reservoir		X	X	

*Local guidance and policy, referenced below, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

Local policy and guidance

For this report, several documents have been consulted for local policy and guidance and relevant information is outlined below:

Newport Local Development Plan 2011-26 (Newport City Council, 2015)

SP3 Flood Risk

Newport's coastal and riverside location necessitates that development be directed away from areas where flood risk is identified as a constraint and ensure that the risk of flooding is not increased elsewhere. Development will only be permitted in flood risk areas in accordance with national guidance. Where appropriate a detailed technical assessment will be required to ensure that the development is designed to cope with the threat and consequences of flooding over its lifetime. Sustainable solutions to manage flood risk should be prioritised.

Flood risk management is a clear consideration for the LDP due to Newport's coastal location, the River Usk and the complex river systems on the Gwent Levels. The tidal limit of the Usk extends beyond Newport's boundary making tidal and fluvial flood risk a key concern for a high proportion of the Authority area. In addition to tidal and fluvial flood risk developers must also consider their effect on surface, groundwater and flood risk from artificial sources, including reservoirs and canals.

GP1 General Development Principles – Climate Change

Development proposals should:

- be designed to withstand the predicted changes in the local climate and to reduce the risk of flooding on site and elsewhere by demonstrating where appropriate that the risks and consequences of flooding can be acceptably managed, including avoiding the use of non-permeable hard surfaces;

Flood risk is a key concern for Newport due to its coastal proximity and its location on the River Usk. Legislation and Regulations set clear expectations for flood risk management, and these include The Flood and Water Management Act (2010), or as amended, and European Flood Regulations (2009). There is a clear requirement for developers to address the issue of flood risk and flood resilience in developments in line with TAN 15: Development and Flood Risk (2004). Flood mitigation and ancillary works associated with managing flood risk will be required to consider their impact upon sensitive environments as set out in Policy GP5 of the Plan.

Development will be directed away from flood risk areas, and layouts and buildings will be expected to incorporate high quality, sustainably designed systems. The use of Sustainable Drainage Systems (SUDS) is encouraged where appropriate. Policy SP4 sets out the Plan's consideration for the use of SUDS.

Development proposals may not only be at risk of flooding themselves, but may also exacerbate existing or create new flooding problems on other land or property through reductions in floodplain storage capacity or by impeding flood flows. Developers must ensure that flood flows and storage areas are not compromised. The impact of climate change and sea level rise will require continued and improved flood risk management schemes. Developments must reflect a lifetime appropriate standard of design. In the case of residential development 100 years is required and for employment and industrial development 75 years.

South East Wales – Strategic Flood Consequence Assessment (Stage 1) (JBA Consulting, 2022)

When designing the layout for a development, consideration should be given to the potential effects of flood risk and great care must be taken so that development is safe and there are no adverse effects elsewhere, including existing land, property or people. In areas potentially at risk from surface water flooding particular attention should be given to proposed ground levels, drainage design and provisions for exceedance flows. Where there is a residual risk of flooding (from any source) to properties within a development the measures to address the effects would normally include raising internal floor levels above the minimum level specified by the building regulations so that potential risks are addressed. The raising of internal floor levels and threshold levels within a development reduces the risk of damage occurring to the interior, furnishings and electrics in times of flood.

Section 11 of TAN-15 provides guidance on the frequency thresholds in which development must be flood free and the tolerable conditions for extreme flood events. The flood levels of

development which is proposed within an area at risk of flooding should be set based on these requirements.

The additional height that the floor level is raised above the maximum water level is referred to as the “freeboard”. Additional freeboard may be required because of risks relating to blockages to the channel, culverts or bridges. This should be considered as part of a site specific Flood Consequences Assessment.

Single storey buildings such as ground floor flats or bungalows are especially vulnerable to rapid rise of water (such as that experienced during a breach). Figure 7 within TAN-15 displays the tolerable conditions in an extreme flood event (0.1% AEP), below which development may be acceptable. This risk can be reduced by use of multiple storey construction and raised areas that provide an escape route. However, access and egress can still be an issue, particularly when flood duration covers many hours or days. Similarly, the use of basements in areas at risk of flooding should be avoided.

Guidance

Strategic Flood Consequence Assessments are carried out by local authorities, in consultation with the Natural Resources Wales, to assess the flood risk to the area from all sources both now and in the future due to climate change. They are used to inform planning decisions to ensure inappropriate development is avoided (PPW, 2024).

3. Site analysis



Site information

The Site is located in Newport in a setting of predominantly residential land use at National Grid Reference ST 33208 87529.

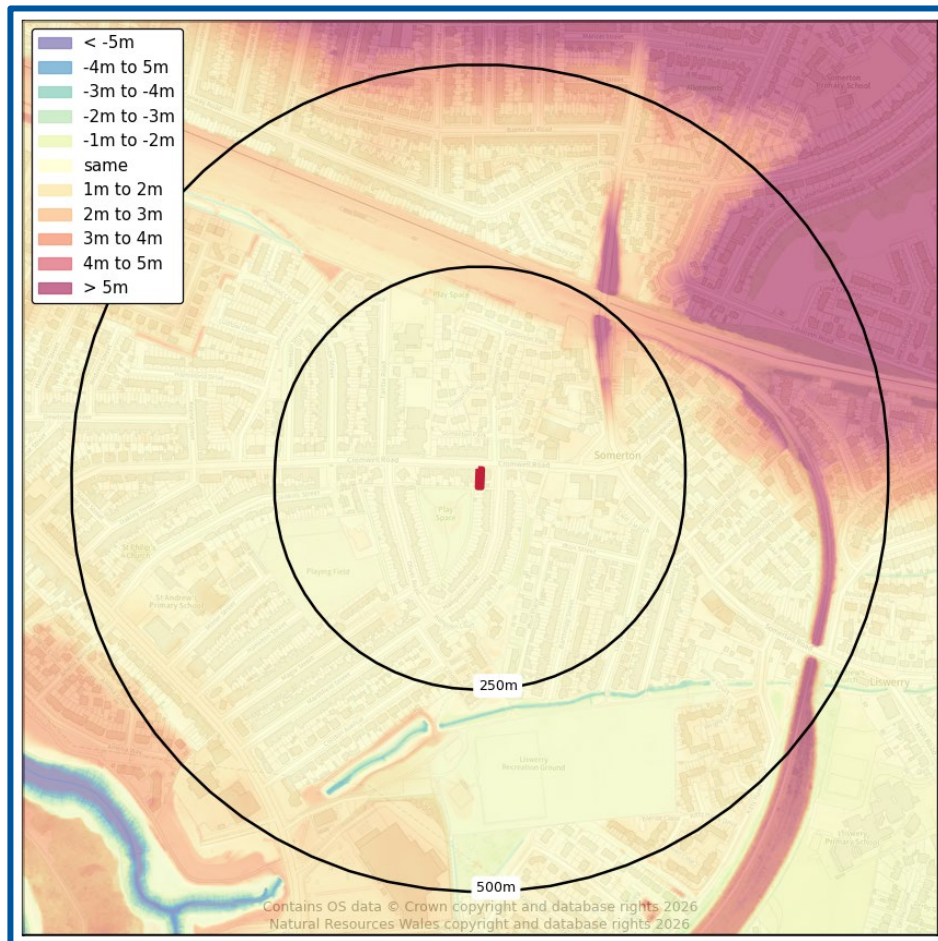
Figure 1. Aerial imagery of the Site (Bluesky, 2026)



Figure 2 indicates ground levels within 500 m of the Site are generally level, falling gradually to the south east towards the River Usk estuary.

The general ground levels on the Site are between 6.71 and 6.97 mAOD with the Site rising to the north and south, with a topographic low at the centre. This is based on NRW elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ± 0.15 m (Appendix C).

Figure 2. Site Location and Relative Elevations (GeoSmart, 2026)



Development

The Site was previously used within a residential capacity as a three storey, four bedroom, terraced dwelling. This report has been compiled to support the retrospective planning permission for the Site. It is understood that the scope of works includes the change of use of the existing dwelling to a six bedroom house in multiple occupancy (HMO) including ground floor sleeping accommodation. Site plans are included within Appendix A.

The effect of the overall development results in an increase in number of occupants and/or users of the building but does not result in the change of use, nature or times of occupation. According to Figure 4 of TAN 15 (2025), the vulnerability classification of the existing development is Highly Vulnerable and proposed development is Highly Vulnerable. The estimated lifespan of the development is 100 years.

Hydrological features

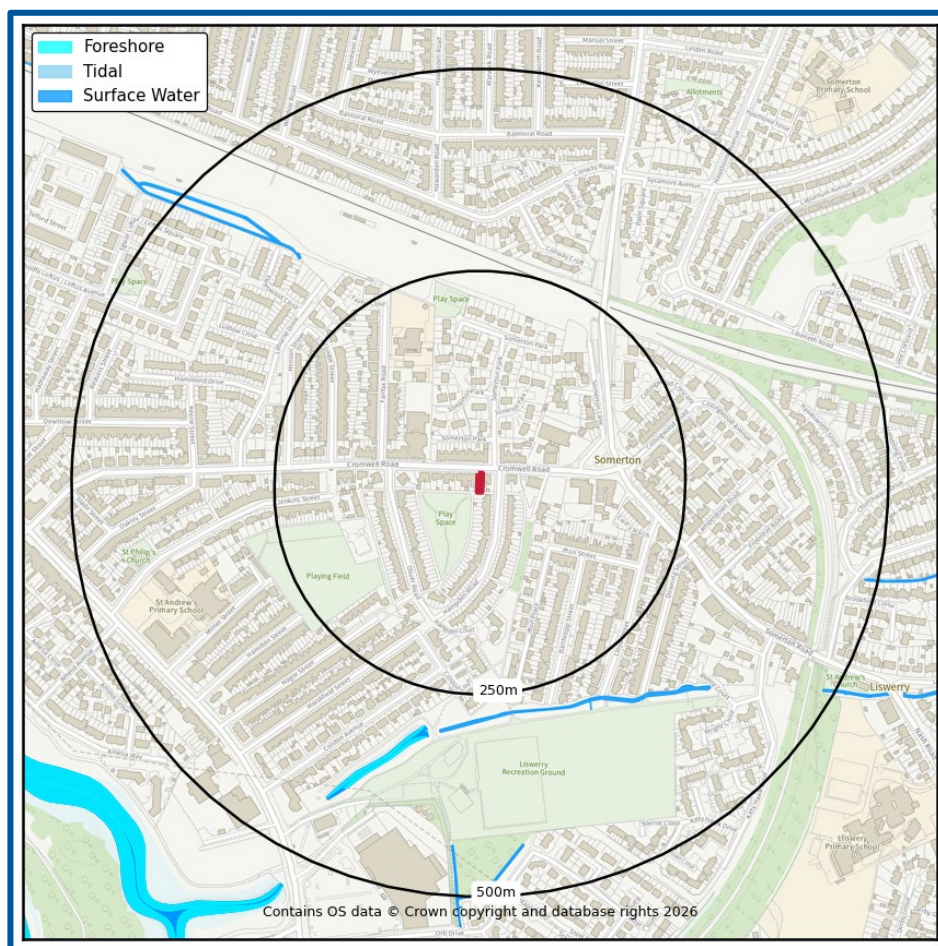
According to Ordnance Survey (OS) mapping included in Figure 3, there are numerous surface water features within 500 m of the Site:

- The Liswerry Pill Reen is located approximately 275 m south of the Site.
- Multiple drainage ditches are located within the vicinity of the Site, with the closest located approximately 345 m north west of the Site.

It should be noted that surface water features that could impact the Site have also been identified beyond 500 m from the boundary:

- The main channel of the River Usk estuary is approximately 800 m south west of the Site.
- The coastline and associated Severn Estuary is located c. 6 km south of the Site.

Figure 3. Surface water features (OS, 2026)



Proximity to relevant infrastructure

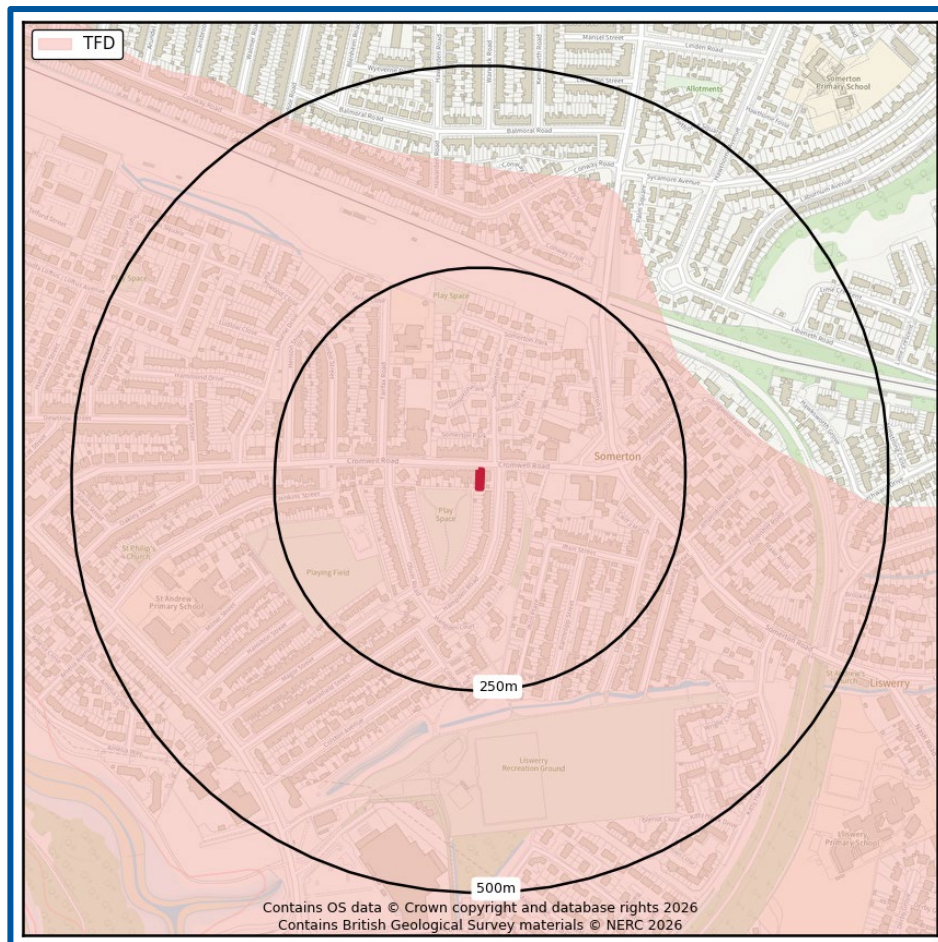
Infrastructure has been identified within proximity of the Site which could influence the risks of flooding to existing or future occupants. These include:

- Multiple bridges are found along the Liswerry Pill Reen to the south, the closest of which is c. 270 m from the Site.

Hydrogeological features

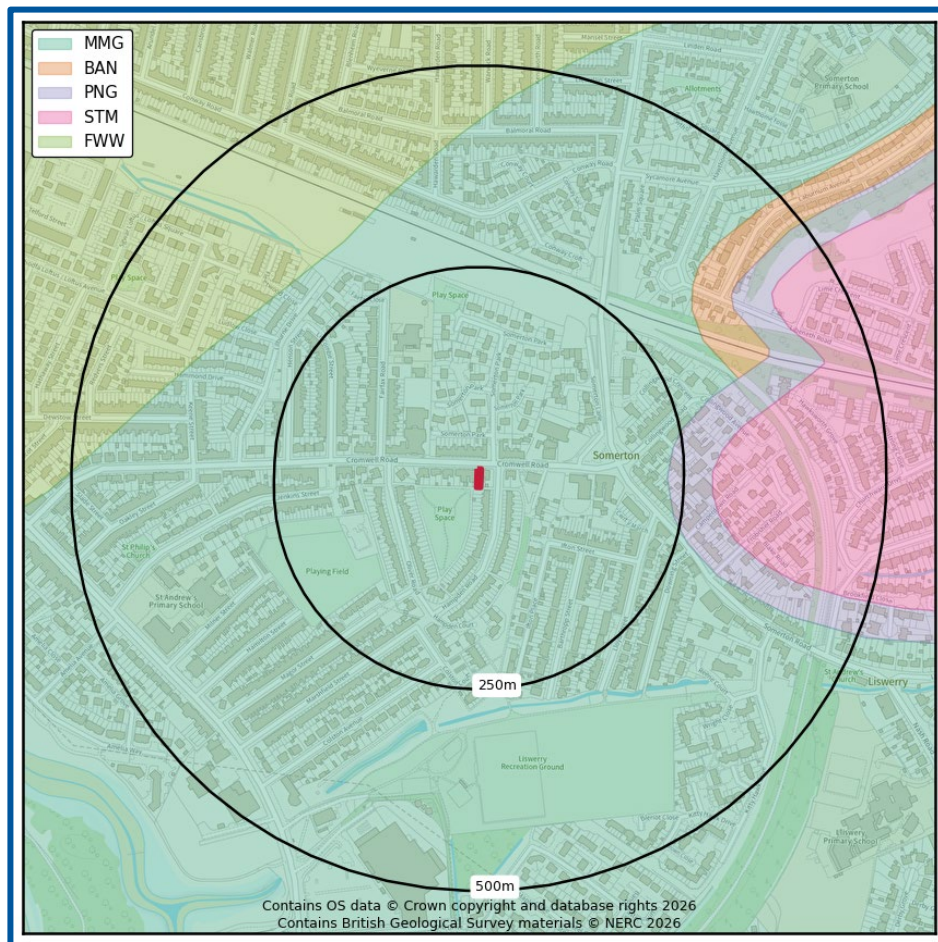
British Geological Survey (BGS) mapping indicates the underlying superficial geology (Figure 4) consists of Tidal Flat Deposits (TFD) comprising of clay and silt, which is classified as a Unproductive Strata (BGS, 2026).

Figure 4. Superficial Geology (BGS, 2026)



BGS mapping indicates the underlying bedrock geology (Figure 5) consists of the Mercia Mudstone Group (MMG) which comprises of mudstone, and is classified as a Secondary (B) Aquifer (BGS, 2026).

Figure 5. Bedrock Geology (BGS, 2026)



Geological conditions

A review of the BGS borehole database (BGS, 2026) indicates the nearest and most relevant borehole to the Site (ref: ST38NW78) is located approximately 90 m to the east of the Site boundary. It is noted that the borehole contains multiple records, and two of these (refs: 2 and 3) have been included in this report. These are found at elevations of 7.04 mAOD (2) and 6.89 mAOD (3) (taken from the borehole records). A summary of the geological strata encountered by the boreholes is provided within the table overleaf.

Table 2. Summary of BGS borehole information at borehole ref ST38NW78

Strata encountered	ST38NW78 borehole 2		ST38NW78 borehole 2	
	Depth to base of stratum (m bgl)	Strata composition	Depth to base of stratum (m bgl)	Strata composition
Topsoil	0.30	Topsoil	0.30	Topsoil
Tidal flat deposits	1.50	Firm mottled grey and brown silty clay	1.50	Firm mottled grey and brown silty clay
	4.40	Stiff grey silty clay	4.20	Firm grey silty clay
	5.80	Very soft black peat	5.85	Soft black peat
	6.50	Very soft grey silty sandy clay	9.70	Weathered red marl with quartzite and limestone gravel and stones
Mercia Mudstone Group	11.80	Weathered marl and firm red clay with limestone and quartzite gravel	11.00	Firm weathered red marl
	>15.00 (base of borehole)	Hard red marl	>15.00 (base of borehole)	Hard red marl

Groundwater

Borehole ref: ST38NW78 2 and 3 indicated a maximum groundwater level of 1.80 m bgl and 1.60 m bgl respectively within clay strata in July 1972, subject to seasonal variations. It is noted that, given the anticipated permeability of the geology and the low likelihood for this to hold a significant groundwater table, this water level is potentially related to water used during the borehole drilling process.

Using the available BGS borehole records, groundwater levels could be between 5.24 and 5.29 mAOD beneath the Site, compared to on-Site ground levels between 6.71 and 6.97 mAOD.

4. Flood risk to the development

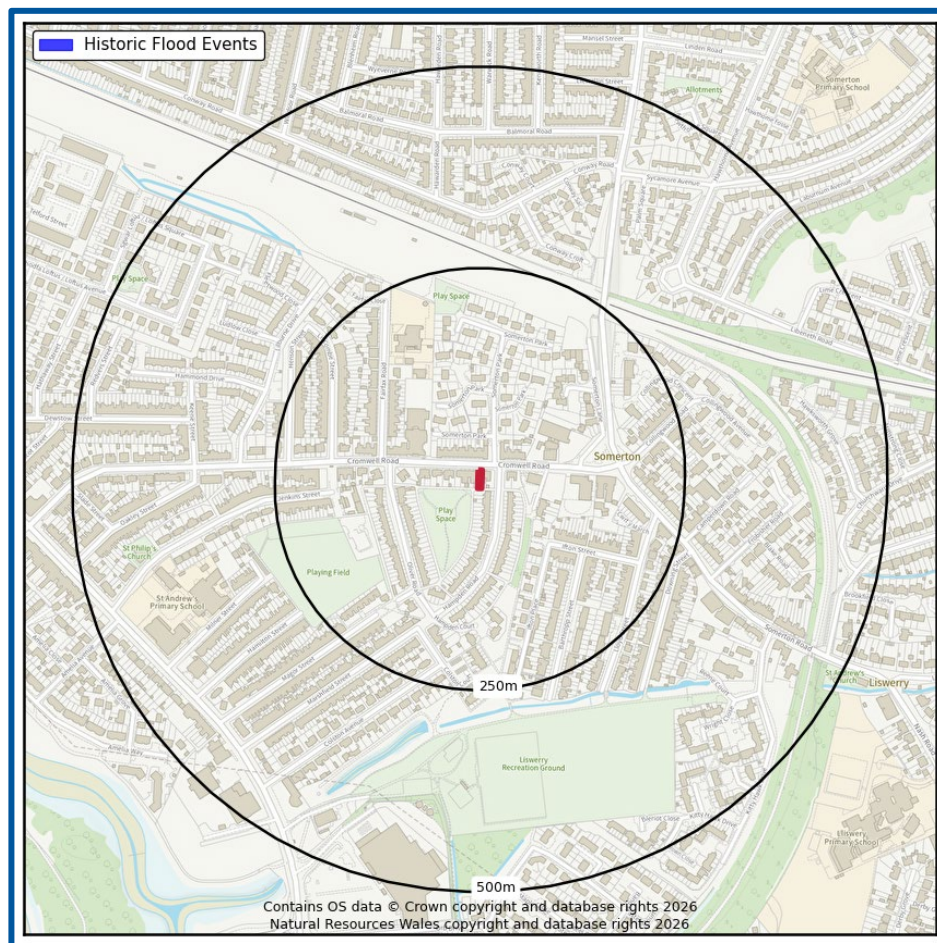


Historical flood events

According to the NRW's Recorded Flood Extents Map (Figure 6) no historical flood events have been recorded at or within the immediate vicinity of the Site (NRW, 2026).

It is noted that the SFCA does not provide historic flood events for the Newport City Council area (JBA Consulting, 2022).

Figure 6. Historic Flood Event Outline (NRW, 2026)



The purpose of historical flood data is to provide information on where and why flooding may have occurred in the past. The absence of any recorded events does not mean flooding has never occurred on-Site or that flooding will never occur at the Site.

Rivers (fluvial) / Sea (coastal) / Estuarine (tidal) flooding

The Site is located in an estuarine location and flooding could occur from a combination of the sea, termed as coastal flooding and from rivers, termed as fluvial flooding. There may be a predominant effect from either the sea or from the river.

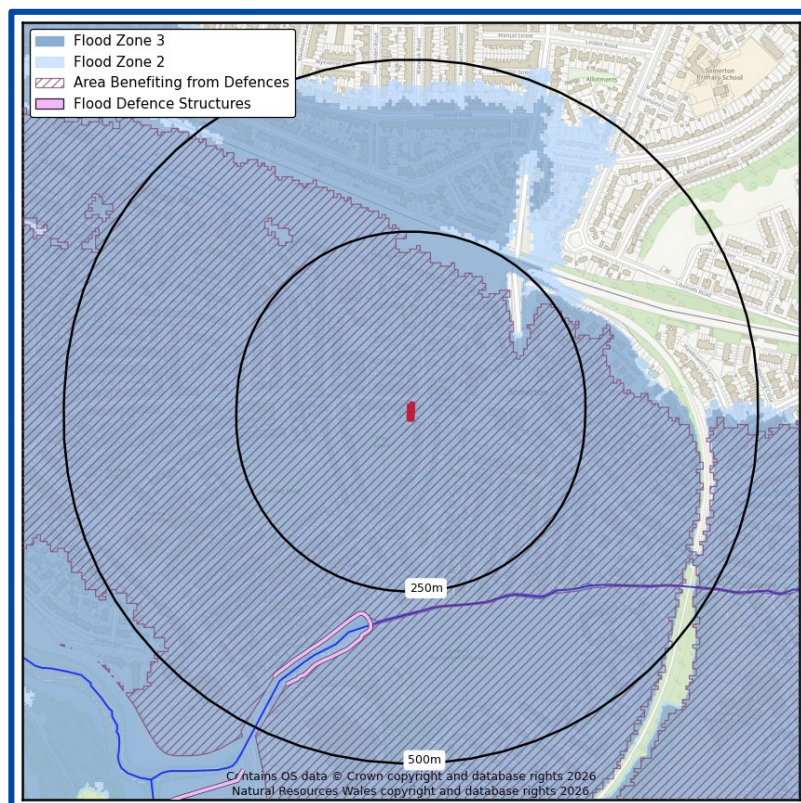
Estuarine flooding can occur from a combination of the sea, termed as coastal flooding and from rivers, termed as fluvial flooding. There may be a predominant effect from either the sea or from the river, through the following processes:

- High tide levels – variations in tidal levels due to gravitational effects of the sun and moon can result in higher sea levels – there is an approximate twice daily variation between high and low tide, onto which is superimposed a spring-neap tide cycle when extra high and low tides occur.
- Surge – an increase in sea level above tidal level caused by low atmospheric pressure which may be exacerbated by the wind acting on the sea. Tidal flooding is of greatest risk when tidal surges combine with high tides;

Flood Zones Map

According to the NRW's Flood Map for Planning (Figure 7), the Site is located within a tidal Flood Zone 3 and a fluvial Flood Zone 2. The Site is therefore classified as having an overall High probability of tidal (coastal) flooding from the River Usk Estuary.

Figure 7. NRW Flood Zone mapping (NRW, 2026)



Flood defences

Guidance

Sites that are located close to flood defences are likely to be zones where rapid inundation will occur in the event of the flood defences being overtopped or breached. A Site located close to flood defences (within 250 m) may require a more detailed FCA subject to local topography.

Existing flood defences

According to NRW's Flood Map for Planning (Figure 7), the Site is located within a TAN15 Defended Zone for tidal flooding, which provides a 1 in 200 year standard of protection.

The NRW's Flood Map for Planning (2026) identifies the following assets within the vicinity of the Site:

- An embankment (Asset ID: EMB1501365) is located approximately 290 m to the south of the Site.

The Shoreline Management Plan (SMP) for the coastline within the vicinity of the Site (refs: CALD1, NEW4 and NEW5) in the SMP19 Anchor Head to Lavernock Point area confirms the policy for defences over the next 100 years is to hold the line.

Future flood defences

From the available information, the likelihood of future flood schemes for the Newport area could not be ascertained at the time of writing; it is therefore assumed that the risk presented by the Newport Model Update (NRW, 2023) is likely to be sufficiently representative of the future fluvial and tidal flood risk at the Site.

Flood Risk including the benefit of defences

The Flood Risk Assessment Wales (FRAW) maps were published in the Summer of 2020.

The FRAW mapping includes consideration of flood defences that have been built to protect against flooding from rivers and the sea. The defences shown provide different levels of flood protection and this is recognised in the risk classification shown in the Flood Risk Assessment Wales (FRAW) map.

The FRAW maps indicate:

- The risk from Rivers is Very Low to Low (Figure 8).
- The risk from the Sea is Low (Figure 9).
- The risk from Surface Water and Small Watercourses is Very Low.

Figure 8. Rivers – FRAW Risk Map (NRW, 2026)

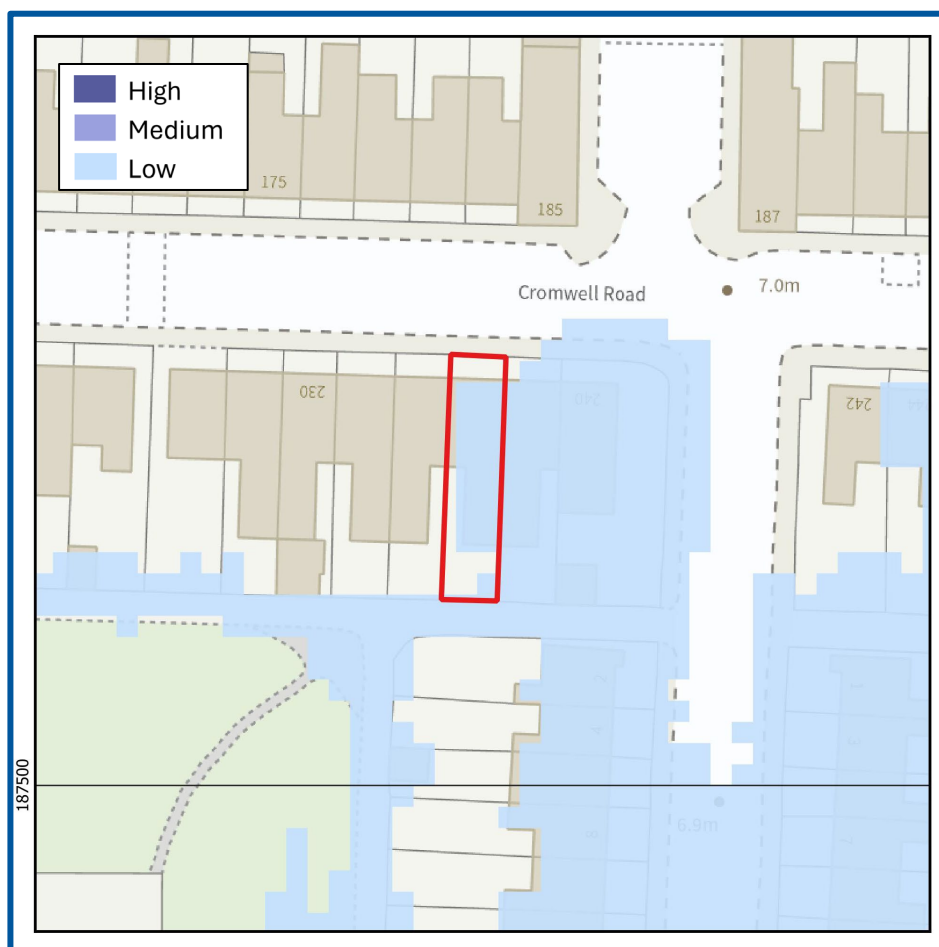
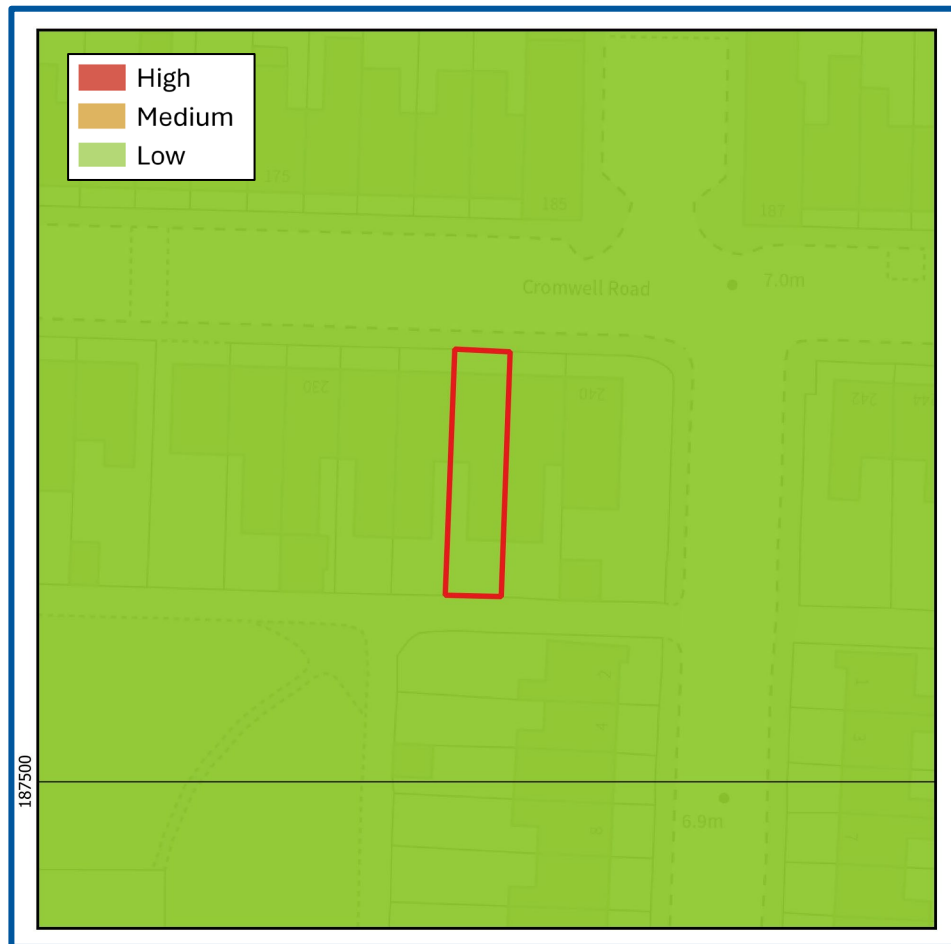


Figure 9. Sea – FRAW Risk Map (NRW, 2026)



Model data

As the Site is located within the NRW's fluvial and tidal floodplain, modelled flood elevation data was obtained from NRW and has been used to assess flood risk and to provide recommendations for mitigation for the proposed development.

Defended modelled data from the Newport Model Update (NRW, 2023) has been extracted from the 2D floodplain data provided at and in the vicinity of the Site¹. The data is provided in Table 3 and is included within Appendix B.

It should be noted that the modelling study identified that the main risk to the area is associated with tidal flooding. The fluvial risk was only considered for the 1 in 2 year event, which has been run alongside each of the tidal scenarios.

Table 3. EA present day modelled flood data

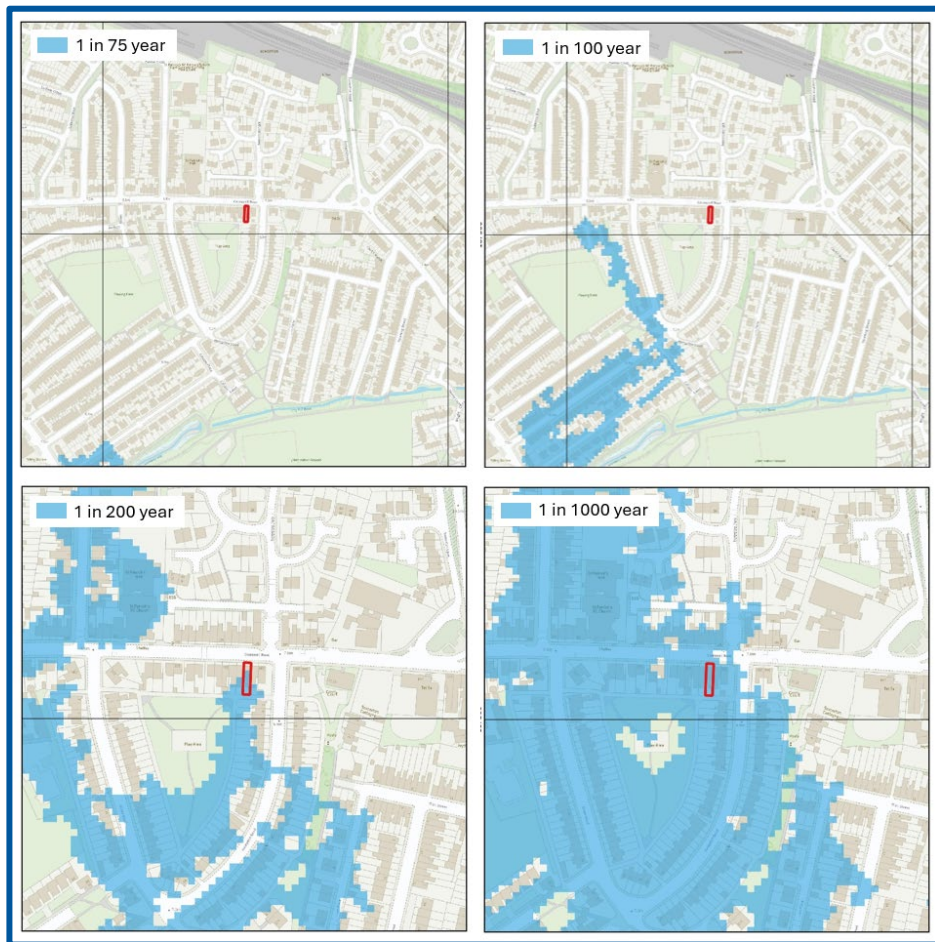
Flood data	1 in 75 year	1 in 100 year	1 in 200 year	1 in 1000 year
Flood level (mAOD)	N/A		6.78	6.92
Flood velocity (m/s)	N/A		Up to 0.03	Up to 0.29
Flood depths (m)*	No flooding anticipated		Up to 0.08	Up to 0.21

*Compared to ground levels on Site ranging from 6.71 to 6.97 mAOD.

Figure 10 confirms the flood extent associated with overtopping of the flood defences in the present day flooding scenarios.

¹ The accuracy of the modelled flood levels are not known. These are dependent on the accuracy of input datasets such as LiDAR data, used to model the impacts of flooding within the 2D domain. Confirmation of the accuracy of the modelled flood data can be obtained separately from Natural Resources Wales.

Figure 10. Modelled present day flooding scenarios



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Climate change factors

In accordance with the Welsh Government's Climate Flood Consequences Assessments: Climate change allowances guidance (2021), allowances should be made for the impact of increased river and sea levels and flows to the proposed development.

The climate change allowances for the 2121 scenarios have been provided for the Site as part of the modelling study, however, to take into account the entire development lifetime, these have been extended to the 2126 scenarios.

As the Site is located within the Newport Local Authority Area, the mean sea level rise by 2120 (from a baseline of 1981-2000) is 1.01 m (70th percentile) or 1.33 m (95th percentile). To provide a worse-case scenario for the 2126 flood events, the 95th percentile has been used to determine a suitable climate change factor to apply to sea levels.

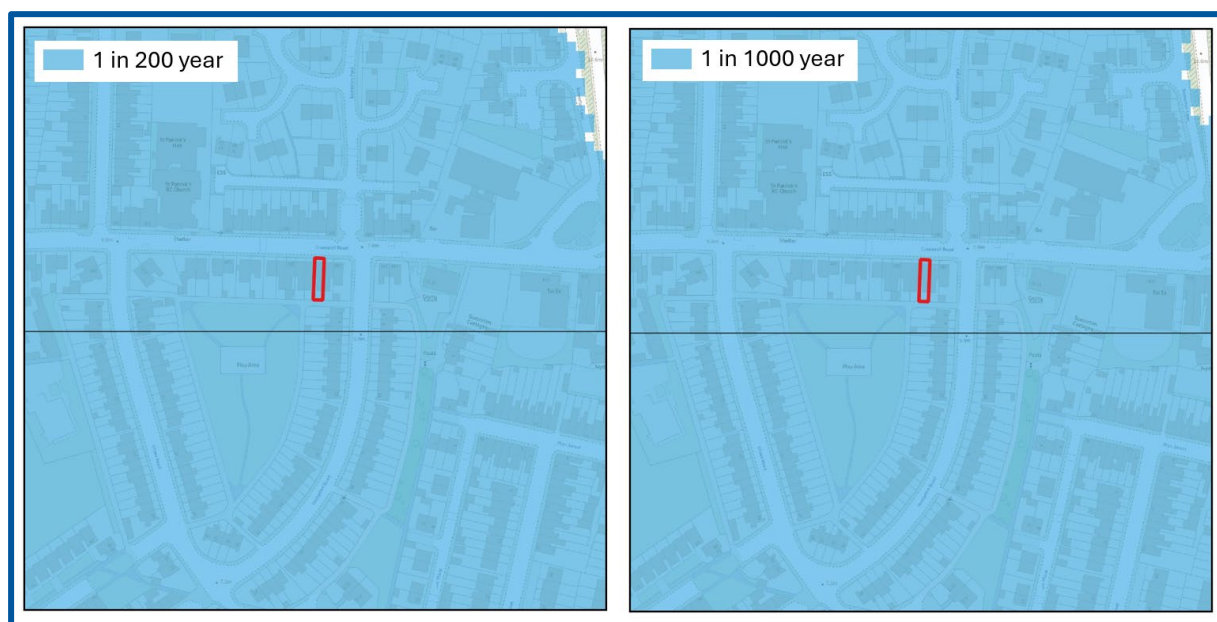
The flood data associated with the climate change scenarios taken from the modelling as well as those extended to 2126 are provided in Table 4 (overleaf).

Table 4. Modelled flood levels plus climate change allowances

Flood data	2121 scenario		2126 scenario	
	1 in 200 year	1 in 1000 year	1 in 200 year	1 in 1000 year
Flood level (mAOD)	7.74	8.62	7.79	8.67
Flood velocity (m/s)	Up to 0.40	Up to 0.51	Unavailable	
Flood depths (m)*	Up to 1.03	Up to 1.91	Up to 1.08	Up to 1.96

*Compared to ground levels on Site ranging from 6.71 to 6.97 mAOD.

Figure 11. Modelled 2121 climate change flooding scenarios



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Baseline mapping indicates a Low risk of flooding from tidal sources. However, given that the Site is anticipated flood during the 1 in 200 year 2126 climate change event, this risk is increased to Medium after further analysis.

The undefended scenarios have also been provided as part of the modelling study, and have been used as a proxy for a breach in defences during the climate change events.

Table 1. Modelled flood levels plus climate change allowances

Flood data	2126 scenario	
	1 in 200 year	1 in 1000 year
Flood level (mAOD)	8.78	9.46
Flood depths (m)*	Up to 2.07	Up to 2.75

*Compared to ground levels on Site ranging from 6.71 to 6.97 mAOD.

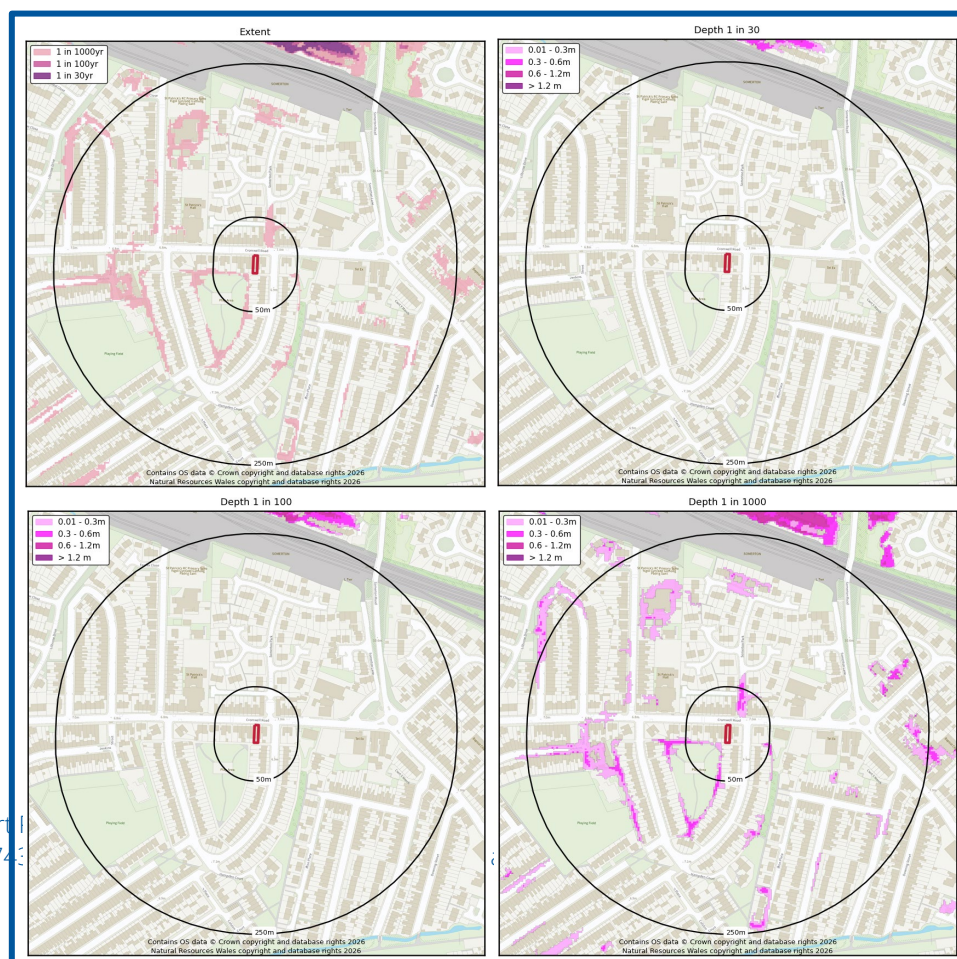
Surface water (pluvial) flooding

Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and tidal floodplains.

The SFCA does not indicate reported incidents of historical surface water flooding within 100 m of the Site (JBA Consulting, 2022).

- According to the National Flood Hazard Map's Flood Risk from Surface Water and Small Watercourses flood mapping (Figure 12), the Site has a Very Low risk of pluvial flooding, as the Site is not anticipated to flood during all modelled events.

Figure 12. NRW Low surface water risk Hazard map (NRW, 2026)



According to NRW's surface water flood risk map the Site is at:

- Very Low risk - chance of flooding of less than 1 in 1000 (0.1%).

Climate change may lead to an increase in rainfall intensity which affects river levels, land and urban drainage systems. Rainfall intensity for small and urban catchments may increase from 5 to 20% (central estimate) or 10 to 40% (upper estimate) over the period to 2115 (NRW, 2026).

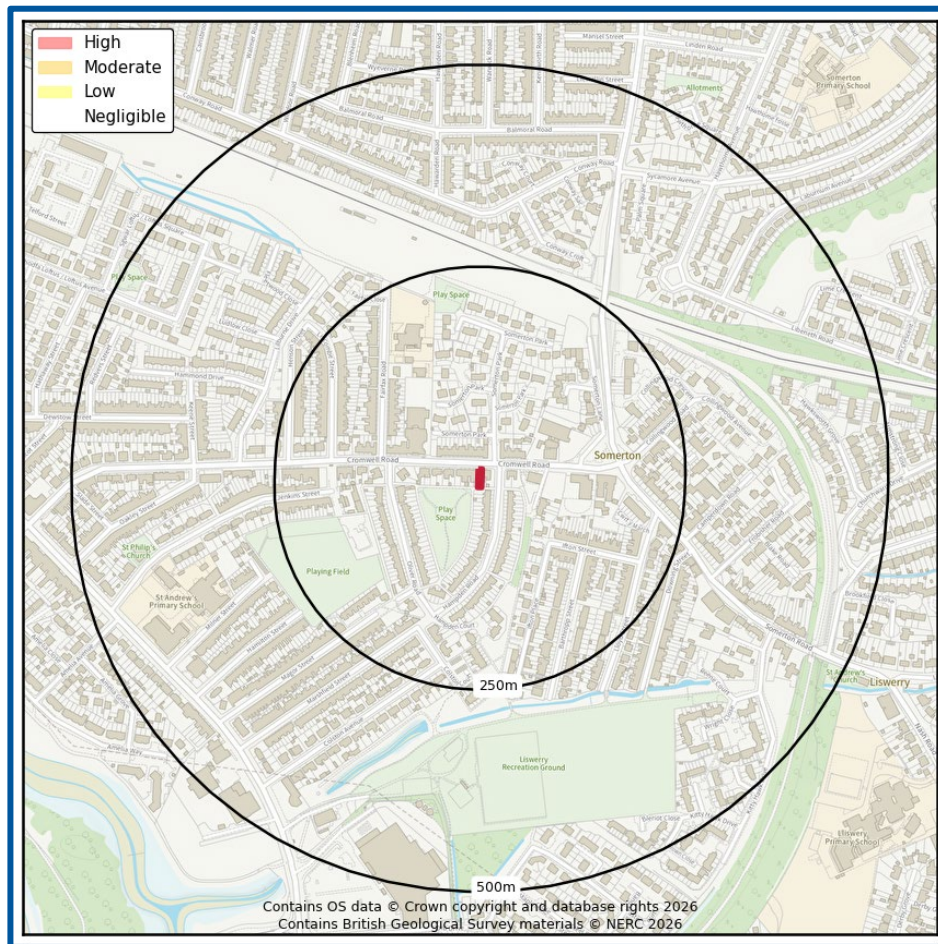
Any existing and proposed on-Site surface water drainage systems should be designed and maintained appropriately to manage the run-off over the lifetime of the proposed development.

Groundwater flooding

Groundwater flooding occurs when sub-surface water emerges from the ground at the surface or into Made Ground and structures. This may be as a result of persistent rainfall that recharges aquifers until they are full; or may be as a result of high river levels, or tides, driving water through near-surface deposits. Flooding may last a long time compared to surface water flooding, from weeks to months. Hence the amount of damage that is caused to property may be substantially higher.

Groundwater Flood Risk screening data (Figure 13) indicates there is a Negligible risk of groundwater flooding at surface in the vicinity from low permeability superficial deposits during a 1 in 100 year event.

Figure 13. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2026)



Mapped classes within the screening map combine likelihood, possible severity and the uncertainty associated with predicting the subsurface system. The map is a national scale screening tool to prompt site-specific assessment where the impact of groundwater flooding would have significant adverse consequences. Mapping limitations and a number of local factors may reduce groundwater flood risk to land and property even where it lies within mapped groundwater flood risk zones, which do not mean that groundwater floods will occur across the whole of the risk area.

A site-specific assessment has been undertaken to refine the groundwater risk screening information on the basis of site-specific datasets (see Section 3) including BGS borehole data and the NRW's fluvial and tidal floodplain data (where available) to develop a conceptual groundwater model. The risk rating is refined further using the vulnerability of receptors including occupants and the existing and proposed Site layout, including the presence of basements and buried infrastructure. The presence of any nearby or on-Site surface water features such as drainage ditches, which could intercept groundwater have also been considered.

- It is understood there are no existing basements and a basement is not proposed as part of the development. *Note: the risks are higher for basements, buried infrastructure and soakaway systems which may be affected by high groundwater levels.*

- According to a review of the hydrogeology (Section 3), the Site is underlain by a significant thickness (>3m) of low permeability superficial deposits above a bedrock aquifer. The groundwater system is therefore considered unlikely to be in continuity with the Site surface as the low permeability superficial deposits will prevent groundwater rise from the bedrock and there is unlikely to be a mechanism for groundwater flooding at the Site.
- Groundwater levels may also rise in the bedrock aquifer in response to high river and tidal events due to the potential hydraulic continuity with the nearby River Usk estuary, however, the presence of lower permeability deposits overlying the bedrock aquifer will likely constrain the emergence of groundwater at the Site.
- Despite the presence of an aquifer, the Site would only be at risk of groundwater flooding if the water table reaches the base of the Site development or the ground surface, when groundwater seepage could lead to overland flow and ponding. The surrounding topography suggests that groundwater seepage is more likely to occur downgradient of the Site within the lower lying land associated with the watercourses to the south.
- According to a review of the hydrogeology (Section 3), borehole ref: ST38NW78 2 and 3 indicated a maximum groundwater level of 1.80 m bgl and 1.60 m bgl respectively within clay strata in July 1972, however, this is potentially related to water used during the borehole drilling process.

The hydrogeological characteristics suggest there is potential for a groundwater table beneath the Site, however, given the presence of a significant layer of low permeability deposits overlying the bedrock aquifer, this is unlikely to interact with the development. Furthermore, given the absence of significant subterranean infrastructure (e.g. basements) at the Site, this is unlikely to be impacted by groundwater flooding.

The baseline groundwater flood risk rating is Negligible, and further analysis confirms that this would be appropriate for the Site.

Guidance

Negligible Risk - There will be a remote possibility that incidence of groundwater flooding could lead to damage to property or harm to other sensitive receptors at, or near, this location.

Climate change predictions suggest an increase in the frequency and intensity of extremes in groundwater levels. Delete any options which are not applicable.

- Rainfall recharge patterns will vary regionally resulting in changes to average groundwater levels.
- A rise in peak river levels will lead to a response of increased groundwater levels in adjacent aquifers subject to the predicted climate change increases in peak river level for the local catchment.
- Sea level rises of between 0.4 m and 1 m are predicted by 2100, leading to a rise in average groundwater levels in the adjacent coastal aquifer systems, and potential

increases in water levels in the associated drainage systems. The ‘backing up’ of groundwater levels from both coast and tidal estuary locations may extend a significant distance inland and affect infrastructure previously constructed above average groundwater levels.

The impact of climate change on groundwater levels beneath the Site is linked to the predicted rise in both peak river levels and sea levels, as well as the variation in rainfall recharge, which is uncertain.

Flooding from artificial sources

Artificial sources of flood risk include waterbodies or watercourses that have been amended by means of human intervention rather than natural processes. Examples include reservoirs (and associated water supply infrastructure), docks, sewers and canals. The flooding mechanism associated with flood risk from artificial sources is primarily related to breach or failure of structures (reservoir, lake, sewer, canal, flood storage areas, etc.)

Sewer flooding

The SFCA does not include any information regarding flooding events from sewers for the Newport City Council area (JBA Consulting, 2022).

Guidance

Properties classified as “at risk” are those that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system either once or twice in the ten year reference period. Records held by the sewage utility company provide information relating to reported incidents, the absence of any records does not mean that the Site is not at risk of flooding.

Canal failure

According to Ordnance Survey (OS) mapping, there are no canals within 500 m of the Site.

Water supply infrastructure

Water supply infrastructure is comprised of a piped network to distribute water to private houses or industrial, commercial or institution establishments and other usage points. In urban areas, this represents a particular risk of flooding due to the large amount of water supply infrastructure, its condition and the density of buildings. The risks of flooding to properties from burst water mains cannot be readily assessed.

If more information regarding the condition and history of the water supply infrastructure within the vicinity of the Site is required, then it is advisable to contact the local water supplier (Dwr Cymru - Welsh Water)

Culverts and bridges

The blockage of watercourses or structures by debris (that is, any material moved by a flowing stream including vegetation, sediment and man-made materials or refuse) reduces flow capacity and raises water levels, potentially increasing the risk of flooding. High water levels can cause saturation, seepage and percolation leading to failure of earth embankments or other structures. Debris accumulations can change flow patterns, leading to scour, sedimentation or structural failure.

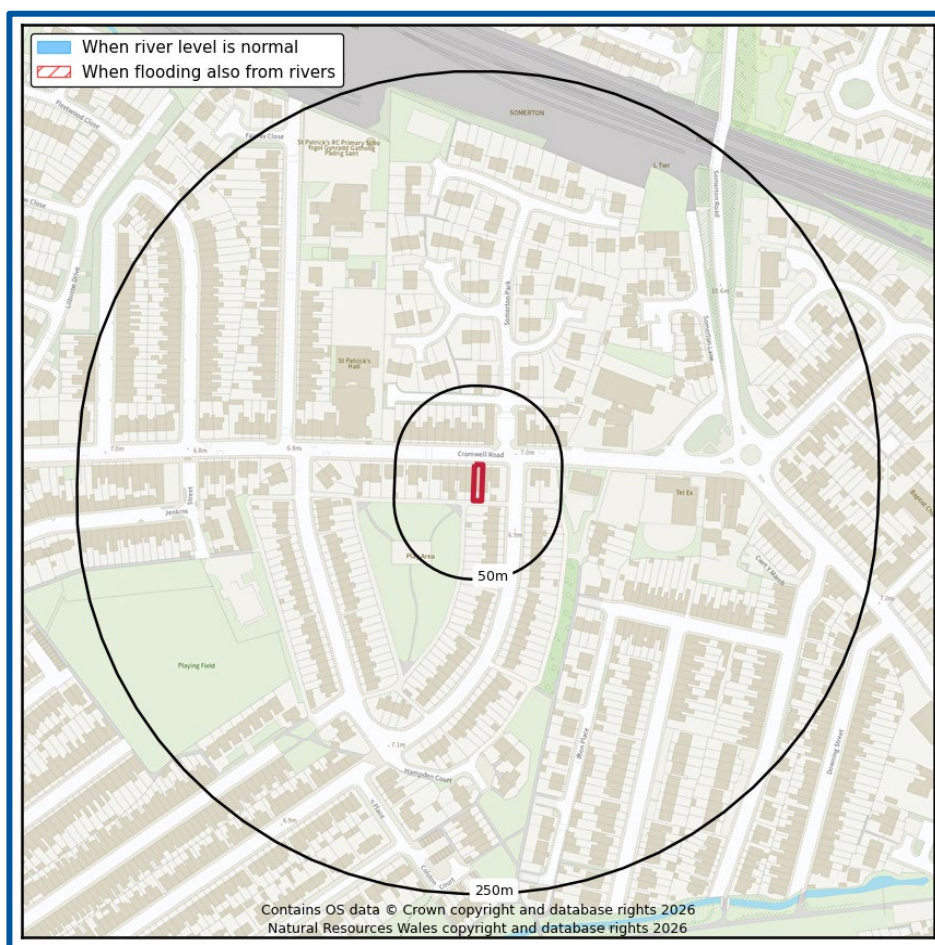
Culverts and bridges have been identified within 500 m of the Site. However, these structures are a significant distance from the Site and are unlikely to represent a flood risk to the Site in the event of a blockage.

The SFCA has not identified any historic drainage issues within the Site area (JBA Consulting, 2022).

Reservoir flooding

According to the NRW's Flood Risk from Reservoirs mapping the Site is not at risk of flooding from reservoirs (Figure 14) (NRW, 2026).

Figure 14. NRW Flood Risk from Reservoirs Flooding (NRW, 2026)



Guidance

The risk of reservoir flooding is related to the failure of a large reservoir (holding over 25,000 m³ of water) and is based on the worst-case scenario. Reservoir flooding is extremely unlikely to occur (NRW, 2026).

5. Flood risk from the development



Floodplain storage

Where flood storage from any source of flooding is to be lost as a result of development, on-site level-for-level compensatory storage, accounting for the predicted impacts of climate change over the lifetime of the development, should be provided. Where it is not possible to provide compensatory storage on site, it may be acceptable to provide it off-site if it is hydraulically and hydrologically linked.

The loss of floodplain storage is less likely to be a concern in areas benefitting from appropriate flood risk management infrastructure or where the source of flood risk is solely tidal.

The development is located within a tidal Flood Zone 3 and Fluvial Flood Zone 2, but does not involve an increase in building footprint. Therefore, there would be no displacement of flood water and compensatory flood storage is not required.

Drainage and run-off

Based on the topography and low surface water flood risk in the vicinity, interference or interaction with overland flow paths and inflows from offsite is considered unlikely.

The development proposals are for a change of use and do not involve the alteration of any external features (or any changes to existing impermeable and permeable areas), an estimation of surface water runoff is not considered to be required.

Any changes to the existing drainage system will be undertaken in accordance with best practice and care will be taken to ensure the new development does not overload/block any existing drainage or flow pathways to/from the Site.

6. Suitability of the proposed development



The information below outlines the suitability of proposed development in relation to national and local planning policy.

National policy and guidance

The aims of the national planning policies TAN15 (2025) and PPW (2024) are achieved by confirming that the proposed development meets the acceptability criteria for flooding consequences.

Guidance
Acceptability criteria for flooding consequences: All developments should be designed to be flood free during the 1% river flood and 0.5% flood from the sea, plus an allowance for climate change over the lifetime of development. Tolerable conditions: During an extreme 0.1% flood event, flood depths should not exceed 600 mm at the Site. The maximum permitted velocity of flood waters is 0.15 m/s for Highly Vulnerable development and 0.3 m/s for Less Vulnerable development.

As the Site is located within Flood Zone 3 and proposals are for a Highly Vulnerable usage, the proposals must satisfy the acceptability criteria for flooding consequences and tolerable conditions.

Table 2. Flood risk vulnerability and flood zone compatibility (taken from TAN15, 2025)

Flood risk vulnerability classification	Highly vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓
Defended Zone	Must satisfy acceptability criteria and tolerable conditions	✓	✓
Zone 2	Must satisfy acceptability criteria and tolerable conditions	Must satisfy acceptability criteria	✓
Zone 3	X (greenfield land) / brownfield land must	Must satisfy acceptability criteria	✓

Flood risk vulnerability classification	Highly vulnerable	Less vulnerable	Water compatible
	satisfy acceptability criteria and tolerable conditions		

Acceptability criteria for flooding consequences:

Highly Vulnerable development must be flood free in the 1 in 100-year fluvial event and 1 in 200 year tidal event, including an allowance for climate change.

- **GeoSmart Comment.** Analysis of the Site demonstrates that the development would not be flood free during a 1 in 200 year tidal event from the River Usk estuary, with depths of up to 0.08 m on Site. Therefore, the proposals do not satisfy the acceptability criteria.
- However, it should be taken into consideration in the application that the proposals are for a change of use of an existing building from residential to an HMO, with no increase in vulnerability classification. The recommended mitigation measures will provide greater protection to the Site throughout the lifetime of the development in comparison with the existing building, which should be considered as part of the planning application.

Tolerable conditions:

During an extreme 0.1% flood event including an allowance for climate change, flood depths should not exceed 600 mm at the Site. The maximum permitted velocity of flood waters is 0.15 m/s for Highly Vulnerable development and 0.3 m/s for Less Vulnerable development.

- **GeoSmart Comment.** Analysis of the Site indicates that flood depths across the Site would exceed 600 mm during the 1 in 1000 year + CC tidal event, and flood waters would exceed 0.3 m/s in velocity. Therefore, the development does not meet the tolerable conditions.
- However, the recommended mitigation measures will help reduce the risk to the Site throughout the lifetime of the development. For example, the landlord and occupants should be signed up to the NRW's flood alert and warning service, to allow evacuation of the Site on receipt of a warning, and to prevent occupants evacuating through deep, fast flowing floodwater in the event of a 1 in 1000 year flood. It should also be noted that the Shoreline Management Plan (SMP) for the Anchor Head to Lavernock Point area (Refs: CALD1, NEW4 and NEW5) confirms the policy for defences over the next 100 years is to hold the line (DEFRA, 2025).

Environment Agency Flood Risk Standing Advice for Sites located in Flood Zones 2 or 3²

For all relevant vulnerable developments (i.e. more vulnerable, less vulnerable and water compatible), advice on the points should be followed:

- Surface water management;
- Access and evacuation; and
- Floor levels.

Surface water management

Plans for the management of surface water need to meet the requirements set out in either the local authority's:

- Surface water management plan where available; OR
- Strategic flood consequence assessment.

They also need to meet the requirements of the approved building regulations Part H: drainage and water disposal. Read section H3 rainwater drainage.

Planning permission is required to use a material that can't absorb water (e.g. impermeable concrete) in a front garden larger than 5 square metres.

Access and evacuation

Details of emergency escape plans should be provided for any parts of a building that are below the estimated flood level:

Plans should show:

- Single storey buildings or ground floors that don't have access to higher floors can access a space above the estimated flood level, e.g. higher ground nearby;
- Basement rooms have clear internal access to an upper level, e.g. a staircase; and
- Occupants can leave the building if there's a flood and there's enough time for them to leave after flood warnings.

Floor levels

The following should be provided:

- Average ground level of the building; and
- Finished floor level of the lowest habitable room in the building.

Ground floor levels should be a minimum of whichever is higher of:

- 300 millimetres (mm) above the general ground level of the site; OR
- At least 600 mm above the estimated river or sea flood level.

² Please note in the absence of NRW FRSA the EA guidance (2025) has been used in lieu providing a clear framework for Flood Risk assessment and mitigation strategies and deemed sufficiently applicable

7. Resilience and mitigation



Based on the flood risk identified at the Site, the national and local policies and guidance and proposed development, the mitigation measures outlined within this section of the report are likely to help protect the development from flooding.

Sea (coastal/tidal) flood mitigation measures

The Site is located within an area which is affected by tidal flooding from Usk estuary, the following table confirms the flood depths associated with the Site.

Table 3. Flood levels compared to ground levels on Site

Flood data	Modelled Flood Levels (mAOD)			
	1 in 200 year	1 in 1000 year	1 in 200 year (2126 scenario)	1 in 1000 year (2126 scenario)
Flood level (mAOD)	6.78	6.92	7.79	8.67
Flood depths (m)*	Up to 0.08	Up to 0.21	Up to 1.08	Up to 1.96

*Compared to ground levels on Site ranging from 6.71 to 6.97 mAOD.

It is recommended that the current development is reconfigured as it does not pass the TAN15 (2025) acceptability criteria and tolerable conditions. It is noted that the development does not result in an increase in vulnerability classification, however, it does increase the number of occupants at the Site. It is therefore recommended that mitigation measures are incorporated to provide a betterment on resilience and recoverability in comparison to the existing Site, and where sleeping accommodation is proposed at the ground floor and would be affected by flooding, this should be moved to a higher level of the building.

Raising minimum floor levels

The vulnerability classification of the Site and the Flood Zone means proposals for the Site fall under the EA's Flood Risk Standing Advice (FRSA) for more vulnerable developments.

In this instance, in line with the NRW guidance the recommended minimum Finished Floor Level (FFL) should be set at least 0.3 m above the 1 in 200 year 2126 climate change flood level of 7.79 mAOD to 8.09 mAOD.

As the development proposals are comprised of a change of use, the raising of Finished Floor Levels (FFL) is unlikely to be a feasible method of flood mitigation. Finished floor levels should be raised as high as feasibly possible and set no lower than existing. Where feasible, sleeping

accommodation should be located at least 0.30 m above the undefended 1 in 200 year plus 2126 climate change flood level of 8.78 mAOD. This would ensure an appropriate level of residual protection in the event of a defence breach and provide sufficient safe refuge during extreme flooding events.

Alternative Mitigation

In lieu of raising the FFL, it may be appropriate to adopt a water exclusion strategy for flood depths up to 0.3 m in line with the EA's Standing Advice. A water exclusion strategy, using avoidance and resistance measures, is appropriate where floods are expected to last for short durations. Potential water exclusion strategies include:

- Passive flood door systems;
- Temporary flood barriers;
- Air brick covers (manual or automatic closing);
- Non-return flap valves on sewer outfalls;

Avoidance and resistance measures are unlikely to completely prevent floodwater entering a property, particularly during longer duration flood events. Therefore, it is recommended that the following flood resilience measures are also considered for retrofitting.

- Flood resilient materials and designs:
 - Hard flooring;
 - Water, electricity and gas meters and electrical sockets should be located above the predicted flood level;
 - Communications wiring: wiring for telephone, TV, Internet and other services should be protected by suitable insulation in the distribution ducts to prevent damage.

Where flood depths are expected to exceed 0.6 m at the Site, a water entry strategy should be adopted to preserve building integrity and to promote flood resilience rather than resistance (which is more difficult to achieve for significant flood depths). A structural engineer should be consulted to confirm this would be a suitable strategy for the proposed development, to ensure flood flows would not impact the structural integrity of the building. Potential strategies include:

- Ground floors designed to permit water passage at high flood depths;
- Hard flooring and flood resilient metal staircases;
- Heating systems, electrical sockets and utility meters should be raised above the predicted flood level where possible; and
- Sump and pump.

Where flood depths are expected to be between 0.3 and 0.6 m both water exclusion and water entry strategies should be adopted depending on a structural assessment of the building.

Rivers (fluvial) flood mitigation measures

The Site has been identified to have a Very Low to Low risk of flooding from fluvial sources. The Newport Model Update (NRW, 2023) confirms that the main driver of flood risk within the vicinity of the Site is from tidal sources, and only models the 1 in 2 year fluvial scenario (which has been included in each tidal return period modelled).

Therefore, the mitigation measures proposed above for tidal risk are considered suitable to manage the relatively low risk of flooding from fluvial sources. These would reduce the risk from Very Low to Low, down to Very Low.

Surface water (pluvial) flood mitigation measures

As the Site is not identified as being at risk of pluvial flooding, mitigation measures are not required.

In line with best practice, the regular maintenance of any drains and culverts surrounding/on the Site under the riparian ownership of the developer should be undertaken.

Groundwater flood mitigation measures

As the Site is not identified as being at risk of groundwater flooding, mitigation measures are not required.

Reservoir flood mitigation measures

The Site is not a risk of flooding from reservoirs; therefore, mitigation measures are not required.

Other flood risk mitigation measures

As the Site is not identified as at risk from other sources, mitigation measures are not required.

Residual flood risk mitigation measures

The risk to the Site has been assessed from all sources of flooding and appropriate mitigation and management measures proposed to keep the users of the development safe over its lifetime. There is however a residual risk of flooding associated with the potential for failure of mitigation measures if regular maintenance and upkeep isn't undertaken. If mitigation measures are not implemented or maintained, the risk to the development will remain as the baseline risk.

Further flood mitigation information

More information on flood resistance, resilience and water entry can be found here: http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf

Emergency evacuation - safe access / egress and safe refuge

Emergency evacuation to land outside of the floodplain should be provided if feasible. Where this is not possible, 'more vulnerable' developments and, where possible, development in general (including basements), should have internal stair access to an area of safe refuge within the building to a level higher than the maximum likely water level. An area of safe refuge should be sufficient in size for all potential users and be reasonably accessible to the emergency services.

Emergency evacuation from the development and the Site should only be undertaken in strict accordance with any evacuation plans produced for the Site, with an understanding of the flood risks at the Site including available mitigation, the vulnerability of occupants and preferred evacuation routes.

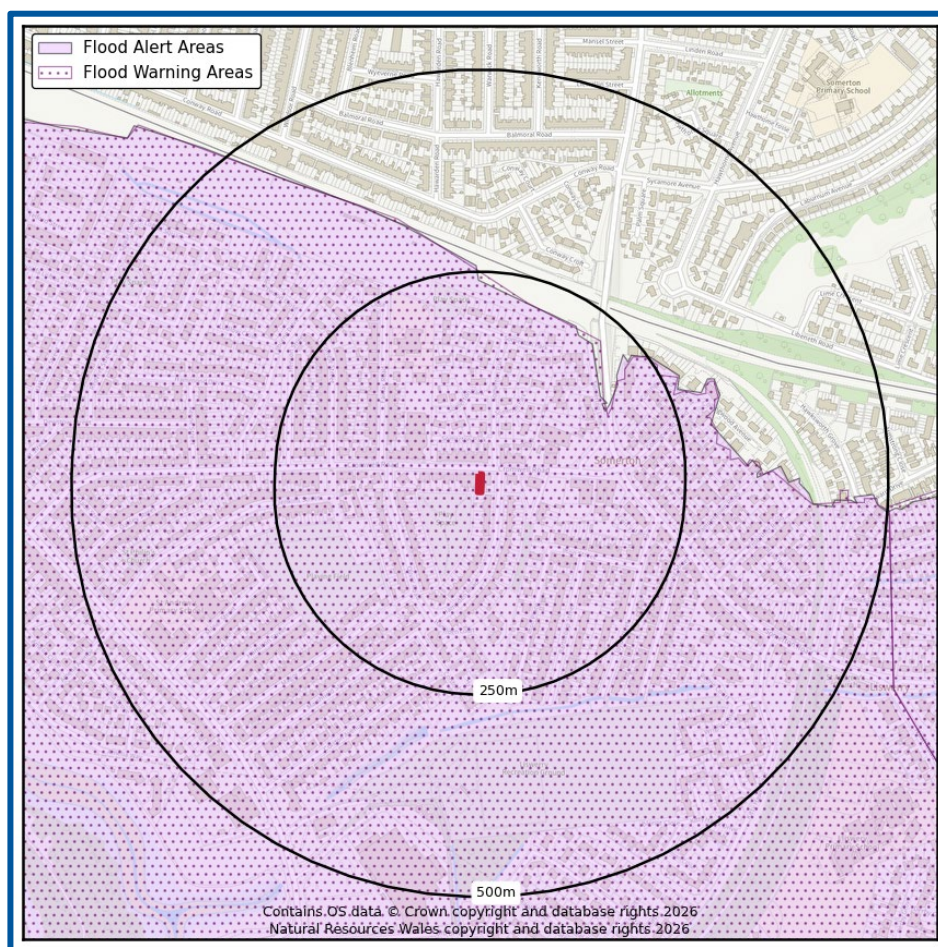
Flood warnings

The NRW operates a flood warning service in all areas at risk of flooding; this is available on their website: <https://www.gov.uk/check-flood-risk>. The Site is located within an NRW Flood Alerts and Warning coverage areas so is able to receive alerts and warnings (Figure 15). All warnings are also available through the NRW's 24 hour Floodline Service 0345 988 1188.

- **Flood Alert:** Usk Estuary; Quick Dial code: 502018
- **Flood Warning:** Usk Estuary at Maindee, North Liswerry and Spyttty Pill; Quick Dial code: 198006

The NRW aims to issue Flood Warnings 2 hours in advance of a flood event. Flood Warnings can provide adequate time to enable protection of property and evacuation from a Site, reducing risk to life and property.

Figure 15. NRW Flood Warning Coverage for the local area (NRW, 2026)



Emergency evacuation

Where possible, a safe access and egress route with a 'very low' hazard rating from areas within the floodplain to an area wholly outside the 1 in 100 year flood event including an allowance for climate change should be demonstrated.

Based on NRW's Flood Zone Map the closest dry evacuation area within Flood Zone 1 is along Somerton Road (c. 525 m north – direct measurement). It is advised that evacuation from the premises would be the preferred option in a flood event if safe to do so. It is recommended that residents prepare to evacuate as soon as an NRW Flood Warning is issued in order to completely avoid flood waters.

On-Site refuge

Evacuation should be the primary action in preference, however safe refuge could be sought at first floor level in a worst-case scenario as the development contains an upper level.

Other relevant information

A Flood Warning and Evacuation Plan (FWEP) is recommended, and the landlord/tenants should be signed up to receive NRW's Flood Alerts and Warnings.

Registration to the Natural Resource Wales flood warning scheme can be done by following this link: <https://www.gov.uk/sign-up-for-flood-warnings>.

It is recommended that main communication lines required for contacting the emergency services, electricity sockets/meters, water supply and first aid stations and supplies are not compromised by flood waters. Where possible these should all be raised above the extreme flood level.

8. Conclusions and recommendations



Table 4. Risk ratings following Site analysis

Source of Flood Risk	Baseline ¹	After analysis ²	After Mitigation ³
River (fluvial) flooding	Very Low to Low		Very Low
Sea (coastal/tidal) flooding	Low	Medium	Low
Surface water (pluvial) flooding	Very Low		Very Low
Groundwater flooding	Negligible		N/A
Other flood risk factors present	No		N/A
Is any other further work recommended?	Yes		Yes (see below)

1 BASELINE risks assigned for the whole Site, using national risk maps, including the benefit of NRW flood defences.

2 AFTER ANALYSIS modification of risk assessment based on detailed site specific analysis including some or all of the following: flood model data, high resolution mapping, building location, access routes, topographic and CCTV surveys. Reasons for the change in classification are provided in the text.

3 AFTER MITIGATION risks include risks to the proposed development / asset and occupants if mitigation measures recommended in this report are implemented, including the impacts of climate change.

*N/A indicates where mitigation is not required.

The table below provides a summary of where the responses to key questions are discussed in this report.

The Site is located in Flood Zone 3 and the development is classed as Highly Vulnerable which will require review and discussion of mitigation measures with the Local Authority. It should be noted that the Site does not meet the acceptability criteria, nor the tolerable conditions. However, it should be taken into consideration in the application that the proposals are for a change of use of an existing building from residential to an HMO, with no increase in vulnerability classification. Furthermore, the recommended mitigation measures will provide greater protection to the Site throughout the lifetime of the development in comparison with the existing building.

Table 5. Summary of responses to key questions in the report

Key sources of flood risks identified	Tidal (see Section 4).
Are standard mitigation measures likely to provide protection from flooding to/from the Site?	No (see Section 7).
Is any further work recommended?	Yes (See exec summary and section 7)

9. References and glossary



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Glossary

General terms

BGS	British Geological Survey
NRW	National Resource Wales
GeoSmart groundwater flood risk model	GeoSmart's national groundwater flood risk model takes advantage of all the available data and provides a preliminary indication of groundwater flood risk on a 50m grid covering England and Wales. The model indicates the risk of the water table coming within 1 m of the ground surface for an indicative 1 in 100 year return period scenario.
Dry-Island	An area considered at low risk of flooding (e.g. In a Flood Zone 1) that is entirely surrounded by areas at higher risk of flooding (e.g. Flood Zone 2 and 3)
Flood resilience	Flood resilience or wet-proofing accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly. Mitigation measures that reduce the damage to a property caused by flooding can include water entry strategies, raising electrical sockets off the floor, hard flooring.
Flood resistance	Flood resistance, or dry-proofing, stops water entering a building. Mitigation measures that prevent or reduce the likelihood of water entering a property can include raising flood levels or installation of sandbags.
Flood Zone 1	This zone has less than a 0.1% annual probability of river flooding
Flood Zone 2	This zone has between 0.1 and 1% annual probability of river flooding and between 0.1% and 0.5 % annual probability sea flooding
Flood Zone 3	This zone has more than a 1% annual probability of river flooding and 0.5% annual probability of sea flooding
Functional Flood Plain	An area of land where water has to flow or be stored in times of flood.
Hydrologic model	A computer model that simulates surface run-off or fluvial flow. The typical accuracy of hydrologic models such as this is $\pm 0.25\text{m}$ for estimating flood levels at particular locations.
OS	Ordnance Survey
Residual Flood Risk	The flood risk remaining after taking mitigating actions.
SFCA	Strategic Flood Consequence Assessment. This is a brief flood risk assessment provided by the local council

SuDS

A Sustainable drainage system (SuDS) is designed to replicate, as closely as possible, the natural drainage from the Site (before development) to ensure that the flood risk downstream of the Site does not increase as a result of the land being developed. SuDS also significantly improve the quality of water leaving the Site and can also improve the amenity and biodiversity that a Site has to offer. There are a range of SuDS options available to provide effective surface water management that intercept and store excess run-off. Sites over 1 Ha will usually require a sustainable drainage assessment if planning permission is required. The current proposal is that from April 2014 for more than a single dwelling the drainage system will require approval from the SuDS Approval Board (SABs).

Aquifer Types

Principal aquifer

These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer

Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Secondary B aquifer

Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated

Has been assigned in cases where it has not been possible to attribute either category A or B to a rock type due to the variable characteristics of the rock type.

Unproductive Strata

These are rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.

Data Sources

Aerial Photography	Contains Ordnance Survey data © Crown copyright and database right 2026 BlueSky copyright and database rights 2026
Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2026 Ordnance Survey data © Crown copyright and database right 2026
Flood Risk (Flood Zone/RoFRS/Historic Flooding/Pluvial/Surface Water)	Natural Resource Wales copyright and database rights 2026

Features/Reservoir/ Flood Alert & Warning)	Ordnance Survey data © Crown copyright and database right 2026
Flood Risk (Groundwater)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2026) Contains British Geological Survey materials © NERC 2026 Ordnance Survey data © Crown copyright and database right 2026
Location Plan	Contains Ordnance Survey data © Crown copyright and database right 2026
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2026 Natural Resource Wales copyright and database rights 2026

10. Appendices

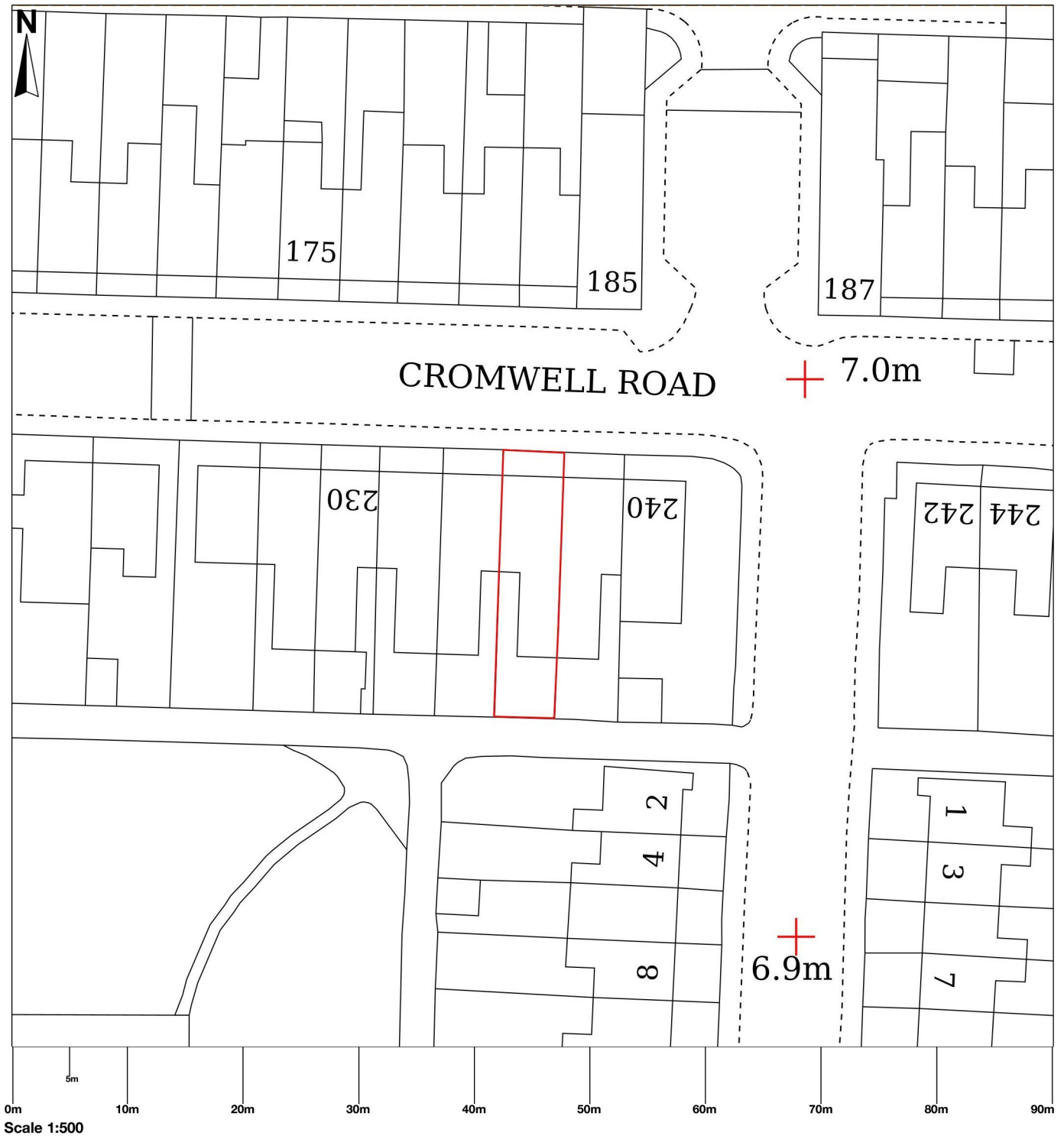


Appendix A

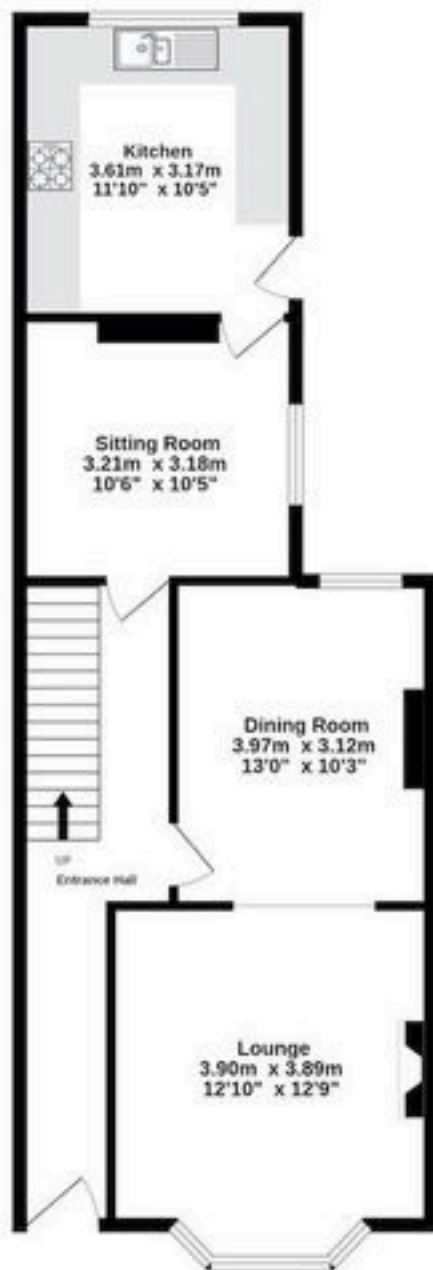


Site plans

236 Cromwell Road, Newport, NP19 0HS



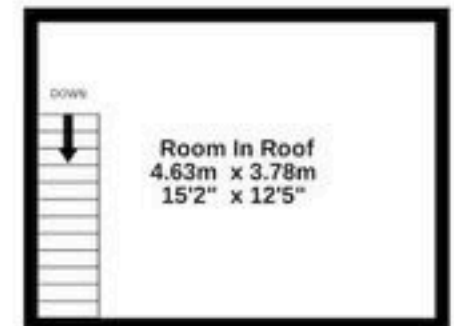
Ground Floor
62.4 sq.m. (672 sq.ft.) approx.



1st Floor
61.8 sq.m. (665 sq.ft.) approx.



2nd Floor
19.0 sq.m. (205 sq.ft.) approx.





Appendix B



Natural Resource Wales data



**Cyfoeth
Naturiol**
Cymru
**Natural
Resources**
Wales

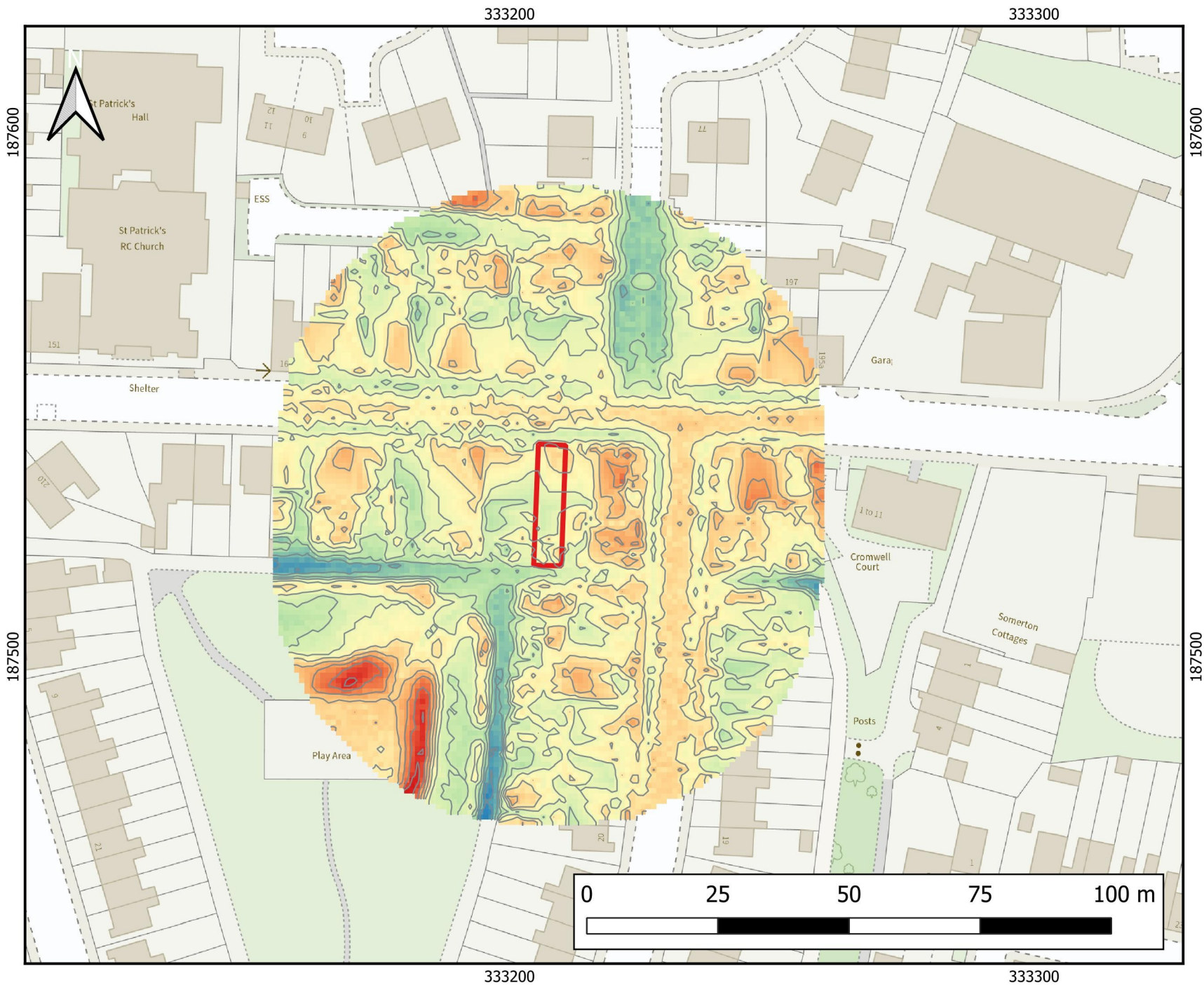
Newport Model Update

Jennifer Wilson

Rev No 1.0



Natural Resource Wales LiDAR ground elevation data



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Email: info@geosmartinfo.co.uk

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TPOs contact details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk. Please ask your search provider if you would like a copy of the search code

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- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
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- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Complaints should be sent to:

Liz Lloyd

Finance Manager

GeoSmart Information Limited

Suite 9-11, 1st Floor,

Old Bank Buildings,

Bellstone, Shrewsbury, SY1 1HU

Tel: 01743 298 100

support@geosmartinfo.co.uk

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